

550631

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
14 October 2004 (14.10.2004)

PCT

(10) International Publication Number
WO 2004/087133 A1

(51) International Patent Classification⁷: A61K 31/401,
C07D 401/12, A61K 31/4439, C07C 259/06, A61P 31/04

NJ 08812 (US). BAJWA, Joginder, Singh [US/US]; 180D
Donor Avenue, Elmwood Park, NJ 07407 (US).

(21) International Application Number:
PCT/EP2004/003478

(74) Agent: GRUBB, Philip; Novartis AG, Corporate Intellec-
tual Property, CH-4002 Basel (CH).

(22) International Filing Date: 1 April 2004 (01.04.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/459,726 2 April 2003 (02.04.2003) US

(81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,
TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM,
ZW.

(71) Applicant (for all designated States except AT, US): NO-
VARTIS AG [CH/CH]; Lichtstrasse 35, CH-4056 Basel
(CH).

(84) Designated States (unless otherwise indicated, for every
kind of regional protection available): ARIPO (BW, GH,
GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),
Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), Euro-
pean (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR,
GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK,
TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW,
ML, MR, NE, SN, TD, TG).

(71) Applicant (for AT only): NOVARTIS PHARMA GMBH
[AT/AT]; Brunner Strasse 59, 1230 Vienna (AT).

(71) Applicant (for US only): SLADE, Joel [US/US]; 14
Theresa Drive, Flanders, NJ 07836 (US).

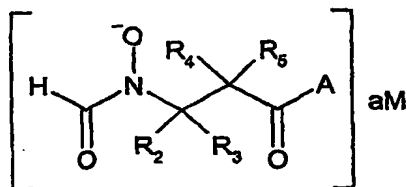
Published:
— with international search report

(72) Inventors; and

(75) Inventors/Applicants (for US only): MÜLLER, Mar-
tin [CH/CH]; Mittlere Strasse 142, CH-4056 Basel (CH).
LIU, Hui [US/US]; 2 Blue Ridge Avenue, Green Brook,

For two-letter codes and other abbreviations, refer to the "Guid-
ance Notes on Codes and Abbreviations" appearing at the begin-
ning of each regular issue of the PCT Gazette.

(54) Title: CRYSTALLINE N-FORMYL HYDROXYLAMINE COMPOUNDS



(I)

(57) Abstract: Certain *N*-formyl hydroxylamine compounds, such as *N*-[1-oxo-2-alkyl-3-(*N*-hydroxyformamido)-propyl]-(car-
bonylamino-aryl or -heteroaryl)-azacyclo₄₋₇alkanes or
thiazacyclo₄₋₇alkanes or imidazacyclo₄₋₇alkanes are useful in the
treatment of bacterial infections. Disclosed are crystalline salts of
such compounds of formula (I), wherein M is a mono- or di-valent
metal; a is $\frac{1}{2}$ or 1.

WO 2004/087133 A1